State of California The Resources Agency

Memorandum

Date : May 7, 2001

To : Management Agencies

Project Agencies

From : **Department of Water Resources**

Subject : **Fish Action #5: February 16 through February 23, 2001**

Description of Action

The daily loss of winter-run length chinook salmon and the salvage of both steelhead and delta smelt increased between February 6 and 15. The combined SWP/CVP winter-run chinook loss was 171 on February 13 and 324 on February 14. Winter-run chinook density (salmon loss per TAF diverted) more than doubled at the SWP from 15.6 on February 13 to 36.1 on February 14. Density at the CVP was lower but also increasing. The seasonal total loss of winter-run chinook was 1,726 as of February 14. If the winter-run density remains high and the loss rate on February 14 continues, the yellow light loss number of 3,702 would be reached in less than a week.

Steelhead salvage was high between February 6 and 15. Combined salvage of unmarked steelhead was 72 on February 13 and 62 on February 14. The seasonal salvage total for unmarked steelhead is 449.

Delta smelt salvage increased to 300 per day on February 13 and 371 on February 14. The 14-day average salvage is 92 smelt per day but will increase rapidly if daily losses continue to increase. The yellow light is a 14-day average of 400 delta smelt per day. Salvage for February is 1,488; however, if the rate of increase in delta smelt daily salvage continues, as seen in recent days, the red light number for February (10,910) could be reached next week.

On February 15, the DAT biologists considered whether an action to reduce fish losses was appropriate at this time and discussed various ways to approach the situation both to maximize the effectiveness of any action and minimize the duration of any export curtailment should conditions improve.

The Management Agencies requested export pumping be reduced to 7,000 cfs combined beginning February 16. If the density of winter-run chinook salmon at the SWP drops below 10 salmon per TAF for two consecutive days, then export pumping could be increased to a combined 9,000 cfs. If winter-run density remains greater than 10 salmon per TAF, export pumping will remain at 7,000 cfs until the situation is re-evaluated on February 20.

The purpose of this action is to reduce the loss rate of winter-run chinook salmon, steelhead and delta smelt, particularly the high rate of increase in the cumulative winter-run chinook salmon losses. Making some simplifying assumptions, if the SWP pumping is reduced by 2,000-2,500 cfs (4,000-5,000 AF per day) and the winter-run loss is 25 per TAF, then the direct loss of winter-run is reduced by 500-600 fish during the 5-day action. Instead of very nearly reaching the yellow light loss number by February 20, the cumulative loss would be about 15% below the yellow light; with approximately 20 to 25 TAF of EWA assets used. If in the near future (next week, next month) the density was 5 per TAF, then 100 to 125 TAF could be pumped with winter-run loss equal to the loss avoided now. In February 2000, a weeklong period of high winter-run density also occurred, and at high pumping rates, losses rapidly accumulated. Densities greater than 30 winter-run salmon per TAF diverted occurred on only three days in 2000. The hydrology prior to mid-February has been similar in 2001 to that in 2000. Last year, however, Delta inflow increased rapidly to about 100,000 cfs in mid-February. Absent such high river flows in the weeks ahead, the duration of relatively high salmon density in the Delta may be longer this year than last. Nevertheless the expectation is the overall seasonal loss can be minimized if losses are reduced now by reducing diversions while salmon densities are high. Indirect benefits of lower pumping in the Delta also may occur for winter-run and other salmon, steelhead and other species, but are less readily estimated.

The pattern of delta smelt salvage is roughly comparable to February 2000 also. The 14-day running average of delta smelt salvage and cumulative salvage increased steadily in the last half of February. The 14-day average peaked at about 400/day before dropping slightly at the end of the month. Total salvage for February 2000 was about 8,300. At this time of year, the delta smelt being entrained are pre-spawning adults. Examination of some fish suggests delta smelt could begin spawning soon.

Since unmarked steelhead salvage patterns and seasonal salvage totals have been highly variable in recent years, making predictions about their relative vulnerability in future weeks is very difficult.

Estimated Cost Of Action

The Department of Water Resources has estimated that these actions could reduce State Water Project (SWP) exports by approximately 39 TAF. The estimate assumes SWP exports would continue at a level approximately between 5,500 and 7,000 cfs in the base operation. The actual amount could be either more or less dependent upon the E/I ratio or the net Delta outflow. DWR has not performed a cost analysis of the change in operations.

Method Of Accounting For Costs

DWR will provide to the Management Agencies an accounting of the actual water, energy, storage and conveyance costs. The water cost analysis will be provided within thirty days of completing the action and will include a comparison between the actual operation (with the fish action) and a base operation (based upon planned exports). All other costs will be submitted thirty days upon completion of the recovery actions. Disagreements regarding the analysis are to be discussed within the B2/EWA Interagency Team. Disputes will be reviewed by the Ops Group and elevated to the Water Operations Management Team for final resolution.

B(2)/EWA Assets

The Management Agencies have concluded that this may be an EWA action. Therefore, EWA assets may be applied to the export reductions of the SWP. The proposed fish action is not to impact the baseline delivery capability of the SWP. Therefore, DWR is to make operations and water allocation decisions based upon the base operations plan, absent the fish action.

There are adequate EWA assets available to cover this February fish action. The amount of water and the time it becomes available will be determined when DWR submits the final water cost analysis to the Management Agencies.

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National Marine Fisheries Services – Michael Aceituno